



PSS Readiness Manual

A workbook in the PROTEUS series

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#3

PSS READINESS MANUAL

A workbook in the PROTEUS series



1

Maritime Branch Analysis A deep dive into the maritime industry in Denmark through the lens of our twelve partner companies. This report is the outcome of the descriptive exploratory phase of PROTEUS. ISBN: 978-87-90416-87-4

2

PSS Case Book The transformation process towards a PSS-oriented company is described, through the presentation of three best practice cases. Each case describes motivations, challenges, business models and PSS offerings. ISBN: 978-87-90416-88-1

3

PSS Readiness Manual

4

PSS Tool Book A catalogue of tried-and-tested tools and methods towards PSS development, with examples of implementation and a recommended methodology for application. ISBN: 978-87-90416-90-4

5

PSS Organisation A look at how to assess a company's PSS potential and description of important organisational capabilities, issues and actions for the PSS providing company. ISBN: 978-87-90416-91-1

6

PSS Partnerships A description of how partnering with suppliers and customers can enhance the effects and values of PSS offerings, including tools and techniques to use in establishing such partnerships. ISBN: 978-87-90416-92-8

7

PSS Business Models A step-by-step guide to the strategic planning and development of PSS solutions, providing a process-oriented view on PSS business model types. ISBN: 978-87-90416-93-5

WHAT IS IN THIS BOOK?

This workbook aims to assist the reader to evaluate, on behalf of their organisation, their company's readiness to embark on a PSS transition journey. By considering the factors that determine if an organisation is ready – and if so, to what extent the organisation is ready to embark on the development and offering of PSS solutions – this workbook guides the reader to identifying where to focus, in order to be able to develop integrated product/service offerings. Furthermore the workbook provides insights into how to measure PSS performance in the company. “Readiness” is seen as a dynamic concept that an organisation has to constantly re-evaluate and reflect upon. To be able to assess their level of readiness, the company considering PSS will need to reflect upon five distinct, but interrelated areas of their business, namely: market dynamics, business models, partnerships, organisational dynamics and value propositions. The first four of these highlighted business areas are covered in other workbooks in this series. We dwell on the fifth aspect, value propositions, in this workbook, as it is a key first question for the company to address, when considering a transition to PSS. The first chapter of the workbook introduces the five conceptual themes, along with a few corresponding questions that aim to aid the decision-making process. The second chapter examines a company's transition from a short term, transactional orientation over to a long term, relational orientation, at the same time considering the emerging implications for a company in such a transition. The third and final chapter of the workbook presents four generic value propositions and introduces measurement criteria for each of these.

CONTENTS

THE PROTEUS INNOVATION CONSORTIUM	4
Introducing PROTEUS	6
What is a PSS	8
INITIAL EVALUATION AND SELF-REFLECTION	10
Market Dynamics	12
Business Models	13
Partnerships	14
Organisational Dynamics	15
Value Propositions	16
FROM TRANSACTIONAL TO RELATIONAL	18
Value-In-Exchange or Value-In-Use?	20
On Value Propositions	22
Forming Value Perceptions	23
PSS PERFORMANCE	26
Key Performance Indicators	28
Four Generic Value Propositions	29
Asset-Centric Value Proposition	30
Recovery Provision Value Proposition	32
Availability Maximisation Value Proposition	34
Outcome-Based Value Proposition	36
SUMMARY	38
Reader's guide to PROTEUS workbooks	42

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THE PROTEUS INNOVATION CONSORTIUM

INTRODUCING PROTEUS

PREFACE

The vast majority of countries in the developed world are now dependent on their service sectors for between 70-80% of their gross domestic product. Even companies with decades of expertise in producing manufactured products are experiencing an increased need to understand before-, during- and after-sales service and have therefore embarked on business development activities that tightly combine product and service offerings in their portfolios. Closer customer contact, commoditisation of goods, total cost of ownership, and product liability are just some of the reasons for this transition. As yet there are only few systematic guidelines and instruments available to aid the development of servitised products. Therefore this series of workbooks. This third workbook asks the question of the industrial reader, as to whether the company is ready - and indeed suitable - to transition from a traditional transactional orientation over to a long term, relational orientation, where a more holistic notion of value proposition becomes central to the innovation thinking inside the company. As well as posing the question of readiness, this workbook also acts as a roadmap to the subsequent workbooks in the series, giving you guidance as to where to find answers to the key questions raised in the book. Although this book is written primarily for our partners on the PROTEUS project, we are sure it can be a source of inspiration to a broad range of practitioners, policy makers, academics and students.

Professor Tim McAloone, PROTEUS Project Manager

WHAT IS PROTEUS?

The Danish Agency for Science, Technology and Innovation (DASTI) promotes and funds so-called innovation consortia, a novel constellation of research and innovation activities, involving industry, technical service companies and research institutions. The idea with innovation consortia is to promote the relationship between research and actual innovation activities in industry, resulting in both enriched research recognitions and applied industrial results. PROTEUS is one of DASTI's current innovation consortia, which focuses on the Danish maritime industry, particularly from the viewpoint of suppliers to the industry.

THE INNOVATION CONSORTIUM'S FOCUS

The PROTEUS Innovation Consortium is working to jointly develop new knowledge about how after-sales service can be effectively integrated into business and product development in industrial organisations, so as to become a source of revenue and value, rather than a cost to the company. The company participants in PROTEUS are all from the maritime industry and are interested in understanding, through examples, how to effectively and systematically integrate service development into their product development and business creation processes.

UNIQUE WITH RESPECT TO PSS

Current literature, tools and methods on Product/Service-Systems (PSS) include examples of procedures for the integration of product and service features in product development. However these approaches do not consider a number of key areas for business, such as the commercial considerations, the strategic organisational issues, or the possibilities of collaboration across the value chain. With its industry-wide consortium of companies, PROTEUS is in a unique position to begin to address some of these issues from a whole branch perspective.

PROTEUS PROJECT IN DETAIL

The PROTEUS* project is a 3 ½ year Innovation Consortium financed by the Danish Agency for Science, Technology and Innovation (DASTI). The consortium is formed by ten companies (see page 10), a branch organisation, two research institutions and an engineering consultancy. The participating companies are mainly suppliers of equipment used in ship building, operation and maintenance. Danish Maritime is the branch organisation, where most of the participating companies are represented. The research institutions are DTU Department of Mechanical Engineering and CBS Department of Operations Management. Finally, IPU Product Development supports the project with its services in engineering consulting and methodology implementation.

* The name of the consortium, **PROTEUS**, is an acronym for the research project title: “**PRO**duct/ service-system **T**ools for **Ens**uring **U**ser-oriented **S**ervice”. It is also an apt title, as it is the name of a mythological Greek sea-god, symbol of adaptability in the face of the changing nature of the sea.

***But
what is
PSS?***

PRODUCT/SERVICE-SYSTEMS (PSS) is an innovation strategy, where a greater integration of products and services has the potential to decouple business success and economic growth from mere product sales.

Instead of viewing a product as an isolated entity, the PSS design activity focuses on creating the right combination of products and services, needed to aid the customer in reaching their goal. Incorporating service thinking into the product development process gives rise to new business opportunities; the product has the opportunity of being made more robust throughout its life cycle (i.e. it is 'Designed for Service') and the customers' entire needs and activities are considered and catered for, from the very beginning of the development process. A PSS solution does not necessarily imply that the service provider is the producer of the physical product(s) included in the PSS, but the service provider must take responsibility for the delivery of the service to the customer, including its timing, physical elements, agreements and related risks. Examples of PSS are emerging in a broad range of markets, from Business-to-Consumer (B2C), through Business-to-Government (B2G) to Business-to-Business (B2B).

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INITIAL EVALUATION AND SELF- REFLECTION

FIVE CONCEPTUAL THEMES TO CONSIDER

The manufacturing firm's relationship with the market, the customers and the ways that revenues are derived, all change over time. As the global market landscape is currently changing from what can be characterised as physical product-based value creation towards performance-based value creation, especially long-established companies producing capital goods are challenged to adapt. Focus can be placed on different angles and change takes different forms, but which path to choose when business-as-usual has prevailed for many years?

Through dialogue with the partner companies in the PROTEUS consortium and further stimulus from current literature, we have identified the following themes as critical for consideration and action, by any company that is challenged by adapting

to new market conditions and in the process of considering whether a PSS strategy is the right move for them. Although all themes are important to act fully integrated PSS solutions are the aim, every company is of course unique, operating in each its own context; thus each theme will have different implications for each company, and should therefore be prioritised accordingly.

MARKET DYNAMICS

The markets in which a company operates dictate the “rules of the game” for any change or action within the respective markets. In other words, the market and the related regulation bodies will influence the strategic orientation and the different business models that are subsequently developed by the company. Companies

need to understand the different markets they operate within and adapt their strategy accordingly, not least due to the dynamic nature of markets and their circumstances. Market changes are initiated by different factors. For example, when a company introduces a new offering that is not already available in the market, the competitors will surely act quickly to match the offer. Thus it is important to be aware of the potential competition, in order to protect proprietary ideas and knowledge, or possible contract details. For additional insights on the maritime industrial landscape and market dynamics, see Workbook 1 and Workbook 7.

Questions a company can ask itself with relation to market dynamics include:

-
- What are the competitive factors in our market?
 - What is the difference in the market prices, between product acquisition (including hidden costs) and the use of a PSS (solution/outcome)?
 - What are the offerings available in the market? What is the competitive environment?
 - How do we evaluate our market-based capabilities? Can we create new markets?
 - Are there components or elements in our offerings that are shared with other parts of the organisation?
 - Are there parts in our PSS portfolio that can be utilised in different markets?

BUSINESS MODELS

A business model provides a systematic understanding of how an organisation proposes, creates and captures value. More specifically, the business model provides a mental map that depicts the interrelationships among a market and a group of customers, plus a highlight of the role of suppliers. Business strategy can be seen as a higher-order concept than that of the business model – that is to say that an organisation can have multiple business models under one business strategy, in order to address different customers and different markets. In principle, a business model provides a systematic understanding of how →

→ a company proposes to provide value to the market, how it creates value for the customer and its network, and more importantly, how value is captured in terms of financial feedback. Workbook 7 expands further on this theme by providing examples of successful PSS business models and a set of tools for designing and validating the business model of a respective organisation.

Questions a company can ask itself with relation to business models include:

- Is there a demand for performance- and/or outcome-based contracts?
- How are product/service offerings broken down in our balance sheet, such as in term of profits and income?
- How can our customers influence on improving or weakening our performance?

- Can we evaluate the Life Cycle Costs (LCC) incurred by our customers?
- How can we increase our liquidity, whilst also reducing risks?
- Can we confidently determine potential profits, risks and costs involved in providing integrated product/service offerings to our customers?
- What kinds of contractual obligations do we have towards our partners? Do they include non-competitive clauses?
- What are the new business opportunities that arise from the ecosystems we are a part of?
- What are the pricing and revenue models we need to develop for PSS strategies?

PARTNERSHIPS

There the focus is on collaboration and inter-organisational coordination. Companies need to collaborate closer than before and create networks that foster innovation and promote customer resource integration, if they are to be able to develop and realise their PSS strategy. It is important to identify the affinities that indicate the key types of relationship in the network to be strengthened, created or removed, in order to enhance the success of a PSS strategy. Refer to Workbook 6 for advice related to network analysis, in order to support the identification of best partners in PSS ecosystems.

Questions a company can ask itself with relation to partnerships include:

-
- How do we map our organisation's value ecosystem?
 - Why is the ecosystem important when designing or operating a PSS strategy?
 - What kinds of network constellation can be beneficial when operating in an integrated product/service oriented business?
 - How do we evaluate our social capital capabilities? Can we build strong relationships and inspire trust with our customers and suppliers?
 - How much can we influence our suppliers? How do we leverage with them?
 - What are the technological capabilities that manifest through the ecosystems that we are a part of?
 - How do our customers evaluate our network quality?
 - What are the mutual dependencies between the customer, the provider and sub-suppliers?
 - How are sub-suppliers involved in the cost, price and revenue models of the provider (i.e. focal company/system integrator)? E.g. fixed prices, incentive payments, bonuses, penalties?

ORGANISATIONAL DYNAMICS

The focus here is on the intra-organisational practices and on the competencies that are necessary, in order for the company to accommodate the imminent →

→ change brought about by a PSS strategy. Furthermore, cultural factors and synergies among departments are important, as well as human resource factors and top management support. Workbook 5 expands further on these topics.

Questions a company can ask itself in connection to organisational dynamics include:

- Are product managers interacting with service managers, such as the sales department and dealers?
- Do the service personnel have the capability to provide consulting services in addition to sales?
- Is hiring of new personnel and/or supplementary training and education for service managers necessary?

- Do we involve repair and maintenance experts in product development processes?
- Do we have the competencies needed to provide service offerings?
- By adding more service in our offerings, how does it impact human resource management?
- Will there be cultural resistance due to a change of mindset?
- Is there top management support to embark on the PSS transition?
- Do we have the IT systems required to support digital service activities?
- Are we ready to invest in a comprehensive, integrated PSS?
- Are we going to create a separate service-focused business unit (e.g. in order to measure performance and finances separately)?

- Do we have a structured development process with integrated PSS thinking (i.e. the goal becomes the performance of the system and not just product quality)?
- What are the elements of the designed structure of our service offerings (i.e. the process structure of service offerings)?
- Do we have a top-down or bottom-up approach to implementing a PSS strategy?

VALUE PROPOSITIONS

Essentially the value proposition is about the offering that one organisation provides to another. It can take the form of a product, a service or anything else of value to the customer. The important take-away is that the mode of thinking changes under servitisation, *from transactional*

value creation to relationship-based value creation, covering a much broader set of usage contexts for the customer. A value proposition can be described on different levels. For example, although it might only be one stakeholder that makes a value proposition to a customer, it is often the case that such a value proposition is a composition of resources from a variety of suppliers. Thus the final provider or system integrator must be able to bring together and integrate a variety of resources and to address value to the customer collectively, for a whole network.

Questions a company can ask itself with relation to value propositions include:

- What is the intended functionality that we aim to provide to our customers?
- What are the benefits that we are offering to our customers (as opposed to product/service features)?
- How do customers evaluate their own usage processes?
- Is customer usage information available? How, for how long, and in what exact context/environment is or will the customer be using the equipment/asset offering?
- Are our current offerings oriented towards a short-term transaction or a long-term relationship?
- In case there is customer lock-on with our offerings, can we support this by investing in strong relationships through learning/training?



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FROM TRANS- ACTION TO RELATIONSHIP

Rather than trying to sell more or improved products, many companies are increasingly offering integrated systems of products and services. In the Danish maritime industry, obtaining a higher share of revenue from service activities is seen by many companies as the way forward. The focus is changing from mere product/asset quality towards securing the performance of the system, and in order to ensure this, service elements need to be added into the portfolio of offerings. This approach is fundamental to augmenting the utility of the PSS offerings, throughout the whole product/service life cycle. As an example of a PSS approach in the maritime industry, the producer of main engines and generator sets, MAN Diesel, offers complete propulsion packages together with the engines, plus after-sales services such as repair, spare parts supply, retrofitting, recycling and monitoring of the engines.

The implementation of a PSS strategy can alter suppliers' operations and lead them to integrate their organisational processes with those of their customers'. It becomes essential that the suppliers (and their respective ecosystems) develop the capability to formulate value propositions that are appealing to customers.

SETTING THE BOUNDARIES OF OPERATION: VALUE-IN-EXCHANGE OR VALUE-IN-USE?

As offerings become more customer-centred, a holistic approach to value proposition is favoured, encompassing the entire value configuration and removing constraints imposed by the boundaries between products (e.g. engine) and services (e.g. training).

Providers that persist with separately offering value for products and

services, respectively, can fall short of understanding the contextual nature of value creation that takes place in the customer usage period, which can potentially hinder their ability to develop integrated PSS offerings.

Traditionally, offerings have been designed around a product or a service, with focus on the quality of attributes of e.g. a piece of machinery equipment. This mindset has functioned for decades, in traditional transaction-oriented markets, but such markets are under transformation. Furthermore this way of operating has led companies to make offerings focused on the sale and ownership of assets, be it an engine (asset), time (in terms of man-hours), spare parts or information (reports). These offerings focus on value-in-exchange, where the value is perceived to be inherent in the features of a product or a service.

For example the purchasing of in-built operational quality, through choosing a valve actuator from one of the PROTEUS partner companies, Emerson MTM, manufactured based on a multiple-helical spline principle, which offers increased stability and durability in a ballast tank management. When selling such a valve actuator individually, the provider does not assume any responsibility for the environment wherein the equipment will be used and customers are required to achieve desired performance levels on their own.

Within a PSS strategy, the provider should construct offerings that take into account the environmental context within which the customer uses/consumes the product or service, thus allowing them to address the benefits of an offering directly – this is termed *value-in-use*. Using the same example, Emerson MTM also bundle their components to provide whole product/service solutions, including components that support tank level gauging (radar intelligence systems), cargo monitoring, high level and overflow control (with VRC – valve remote control). These bundles, which can be installed onto new-build ships or retro-fitted onto existing vessels, are furthermore connected with sensory equipment, in order to provide monitoring services to the customer. Here the focus shifts away from merely selling the products and over to the optimal configuration of resources (equipment, humans, technology, and information). Customers do not necessarily need to own an asset; instead they need results, performance and benefits that arise from using the emerging competencies from a supplier's ecosystem. →

→ The main difference between the two approaches is the ways that value is approached and measured. With a transactional (value-in-exchange) approach, the value is measured ex-ante, in terms of costs versus benefits, and the supplier's responsibility for value creation ends just as soon as the transfer of ownership of the physical goods has taken place. The value systems of the provider and the customer are seen in isolation from each other, except at the point of exchange. On the other hand, within a relational strategy, value is also measured after the transaction, in the context where value is created (value-in-use). It is the provider's responsibility to facilitate the value creation process for the customer, in order to further demonstrate and increase the value perception of an offering. Nevertheless it has to be underlined that during a PSS transition

phase, a company may find itself having to address a diverse set of stakeholders (partners, customers, etc.), who each can have different demands. Thus, in the early phases of the PSS transition, both relational and transactional mindsets will probably be necessary to operate, in order to satisfy customer needs.

ON VALUE PROPOSITIONS

The Value Proposition (VP) is a customer-centred concept that enhances communication and facilitates customer-provider interactions. Essentially, the VP is about a proposal, a promise to deliver specific benefits that can fulfil customer needs. It serves not only to inform customers of the different offerings that an organisation has in its portfolio, but also to frame the expectations for what the value creation process entails.

The ways that VPs are formulated moderate the motivation of a client to buy. By articulating a VP in appealing ways and by making the benefits (as opposed to product attributes) to the customer explicit, it is possible to make superior VPs, which in turn will foster superior value outcomes. Real value outcomes can only be determined by the customer – through a process of assessing the benefits received against the customer resources invested to realise them. Thus providers must consider the customer's realisation of value in the use experience.

Traditionally the VP has been centred on value-in-exchange, that is, after a VP acceptance and subsequent payment. However, within a PSS mindset, a "total-care" approach becomes the goal, along with a relationship that provides a constant stream of revenues. The relationship is triggered via a VP and the

subsequent acceptance – and only then can value be co-created, in the usage situation. It is the responsibility of the company to make the best VP, while value is realised by the client, possibly with support from the provider.

Value creation process

Value creation is the process that follows the acceptance of a value proposition; this can be described as the process that delivers the benefits of an offering to the client. For example, value creation for a shipowner can be the delivery of effective and efficient usage of a propulsion engine that allows the shipowner to carry out uninterrupted business in the most beneficial way. That said, it becomes apparent that the value creation process primarily regards the usage of the equipment and not the design or production stage in general.

Understanding customer value creation processes is key to the creation of successful PSS strategies. It follows that as an organisation is able to collect more information about its customers' requirements, the more specific and suited the value propositions become.

Value creation or co-creation

There is an important distinction between value creation and value co-creation. As an example, when a provider adopts a transactional approach and merely sells equipment to a shipowner, value is created by the operation of the equipment in isolation from the provider. But when a provider is actively →

→ involved in the operation of equipment together with the customers, value is co-created between the customer and the provider. Workbook 6 covers this topic in detail.

FORMING VALUE PERCEPTIONS

Traditionally, suppliers make value propositions that focus on pricing, which in turn is based on production costs. However, as the focus shifts away from the sale of physical assets and value-in-exchange – where it is easy to calculate the value in terms of costs – and towards the provision of benefits and value-in-use, different ways of influencing customer's value perceptions need to be addressed, in order to demonstrate the value of an offering, not only in terms of price and costs, but also in terms of benefits, valuable to customers and their business.

When a supplier becomes a participant in the value co-creation process, where different stakeholders participate, it can become difficult to pre-define the nominal and potential value of the final offering. A starting point to this is to address the context in which value is created and where delivery is taking place. Workbook 4 provides various tools that can enhance the understanding of the customer context, such as the User Activity Cycle or the Value Strategy Canvas.

The more customer- and service-oriented an offering is, the more chances the provider has to co-create value.



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PSS PERFORMANCE

FOUR VALUE PROPOSITIONS AND THEIR KPIs

This chapter introduces four generic value propositions, along with the corresponding benefits that different PSS strategies can offer. The four value propositions are further analysed, with focus on performance. More specifically, this section presents various performance criteria for each one of the four VPs that can support measurement of different strategic business areas.

KEY PERFORMANCE INDICATORS

Key Performance Indicators (KPIs) allow a business to monitor and measure performance in terms of predetermined targets. This allows companies to benchmark themselves against others and to provide incentives among different business units or departments, in order to reach goals. Furthermore, KPIs are widely used in contract formation, so as to reduce risk and managing uncertainty in the

delivery of an offering, by having the compensation and the general cost structure of contracts tied to specific KPIs.

A common issue with KPIs and performance measurement in general, is the difficulty of knowing beforehand (e.g. before a contract is formed or at the product launch) the exact measures that would be needed, in order to evaluate the operational performance of a supplier or department – something that leads to KPIs frequently being changed.

Especially in the case of service delivery, it can become difficult to quantify and measure variables that indicate performance, for which reason Service Level Agreements (SLAs) are sometimes introduced, instead of KPIs. SLAs are basically contracts which describe in detail the exact process of a respective service delivery.

FOUR GENERIC VALUE PROPOSITIONS

The Asset-Centric VP focus on the sale of equipment through transactions, with little influence on customer's usage of equipment. Recovery Provision VP, on the other hand focus on the provision of a guarantee, via contract, regarding the recovery of any lost quality attributes of equipment - also known as "after-sales service". In a similar context, Availability Maximisation VP, focus on providing highest possible usage potential of the provided equipment. Throughout the product life cycle, or for a given contract duration, the product must be operable. Finally, with Outcome-Based VP, the provider assumes a high degree of responsibility and provides, under contract, an agreed and measured functionality and/or result to the customer.

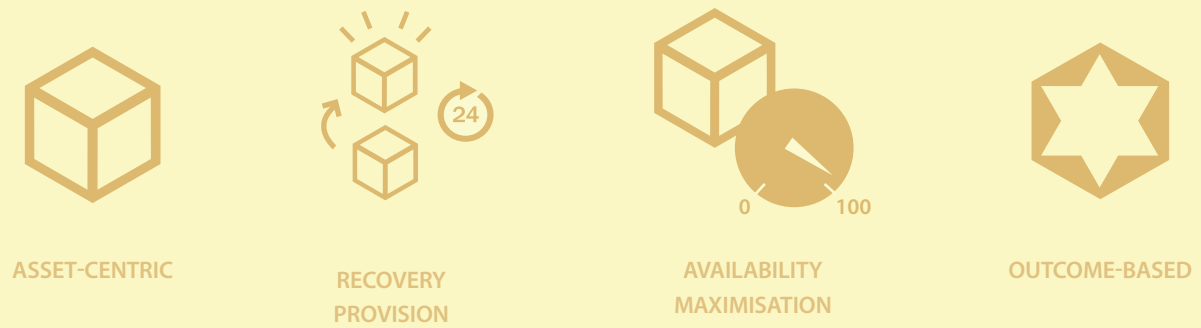


Figure 1. Four generic value propositions



ASSET-CENTRIC

Asset-centric VPs focus on the sale of equipment and provide benefits related to performance improvements or cost reductions for the customer, who uses the equipment in isolation from the supplier. Value proposed relates to the product and specifically, the potential performance that the product renders possible. Customers are satisfied, as long as the attributes of the product conform to their expectations. VPs under this category set clear operating boundaries between the provider and the customer, whilst value would be determined based on costs – a transactional approach. As soon as an asset-centric VP is accepted the customer attains ownership of the asset, for which the customer holds responsibility of usage and general decision making. An example of an asset-centric VP is the sale of a

propulsion engine to a shipowner. The point is that the sale has a short-term focus and no further service would be needed or offered.

It is the service-systems such as the ones implied in the following three VPs that allow for superior integrated offerings – which can also inform the equipment design and the asset-centric VPs. The following table depicts KPIs that support with asset-centric VPs.

GENERAL DESCRIPTION

BENEFITS FOR THE
CUSTOMER

Product quality and/or superior performance of an asset

VALUE CREATION
PROCESS

Customer creates value on their own environment

CRITICAL POINTS

Understand the product features that customers value in order to design accordingly

KPIs

ASSET PERFORMANCE

The equipment must comply with the pre-determined values for quality.

BRAND VALUE AND EQUITY

A ratio or index of the various factors that moderate brand value (e.g. loyalty, recognisability, customer satisfaction).

PRICE AND DISCOUNT LEVELS

Overall price level of the asset along with different discount levels.

CUSTOMISATION AND INSTALLATION COSTS

Costs related to the installation and/or customisation of an asset.

WARRANTY COSTS

Costs related to the warranty of equipment.

NUMBER OF NEW PRODUCTS LAUNCHED

Number of new product launched to the market within a predefined time period.

NUMBER OF PRODUCT VARIANTS

Number of product variants available in the portfolio (present and future).

RATES OF SALES IN NEW PRODUCTS

Percentage of sales from new product lines.



RECOVERY PROVISION

A very common VP within capital intensive and manufacturing companies is related to the recovery of equipment. Here, more often than not, the value proposition addresses the time of equipment failure. Commonly termed as “after-sales service”, these VPs come along with contracts that guarantee the recovery of any lost quality attributes of equipment. Most commonly mentioned examples of such contracts can include repairs contracts, spare parts contracts and post-design services contract . As an example, the PROTEUS partner company Novenco Fire Fighting has a series of VPs, based on recovery provision, where the company both carries out routine checks of their installed fire fighting systems, and also operates a system of spare parts provision and emergency callout repairs. Customers are satisfied as

long as the provider recovers a piece of equipment quickly, with minimal downtime. Value is co-created from the joint ability of provider and customer to ensure the asset recovers quickly to a usable state. When the VP is focused on recovery, the supplier ecosystem provides on-demand service and is required to act immediately to recover the equipment, as there may be penalties connected to delays. The more knowledge that customers have on a respective piece of equipment, the better they are able to articulate technical problems, so that providers can solve these efficiently and effectively – especially in instances of remote assistance. Typically, providers are compensated via fixed-term subscriptions to provide equipment failure coverage and, in addition, variable one-off payments for each time new or replaced parts are ordered.

GENERAL DESCRIPTION

BENEFITS FOR THE CUSTOMER

Minimum downtime and disruption in case of equipment failure.

VALUE CREATION PROCESS

Provider adopts a reactive approach and jointly supports the customer to co-create value.

CRITICAL POINTS

Always be alert to act immediately. Have personnel with deep knowledge about the technical aspects of equipment.

KPIs

CALL-TO-REPAIR RESPONSE TIME

The amount of time a supplier needs to recover the equipment measured from the point that the failure has been communicated by the customer.

Tip: Set a target value and incentives for meeting the target, penalties for missing it – measure the deviation.

TECHNICAL QUERY RESPONSE SPEED

The time that a supplier responds to customer technical query and acknowledge it requires resolution.

TECHNICAL QUERY RESOLUTION SPEED

The time taken by the supplier to resolve a technical query once it has been acknowledged.

TECHNICAL VARIANCE RECOVERY CONCESSIONS

Conformance of component to predetermined specifications.

REPAIR FREQUENCY

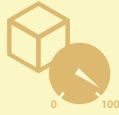
How often the repair takes place.

MEAN TIME TO FAILURE

Mean time expected until the first failure.

MEAN TIME BETWEEN FAILURE

Amount of failures per million hours of a product.



AVAILABILITY MAXIMISATION

The goal here is to maximise the potential usage of the equipment. Throughout the product life cycle, or for a given contract duration, the product must be operable. The success and performance of offerings included in availability contracts is dependent of the degree that equipment is accessible for use by the customer. Contrary to the previous category of VPs (Recovery Provision), where the goal is to minimise disruption time of customer processes in case of equipment failure, here the goal is the absence of failure and disruption altogether. Customers will be satisfied as long as the equipment is available for use. This means that the provider has to have access to information on repairs, maintenance and spare parts and have the equipment/asset available for operation at any given time. To be able to create value within the context of availability

contracts, the supplier has to take a proactive approach (e.g. preventive maintenance). The offerings included under these VPs are information-intensive, specifically regarding information that relates to equipment usage contexts. It follows that the customer must be willing to share information, perhaps of confidential nature, with the supplier who contracts based on availability. A common requirement for the supplier to offer availability contracts is to integrate information systems with their customers', in order to be able to provide continuous forecasting and support. As the customer can adopt a very passive role in the context of availability VPs, it is important to define beforehand the actions and tasks that the customer will be responsible for.

GENERAL DESCRIPTION

BENEFITS FOR THE CUSTOMER

Increased availability of equipment in order to maximise the potential customer usage.

VALUE CREATION PROCESS

Provider adopts a proactive approach and continually monitors the customer contexts in order to increase the opportunities for intervention and value co-creation.

CRITICAL POINTS

Critical points Acquire information and understand how and where the customer uses the equipment/asset.

KPIs

DOWNTIME PER YEAR

Measure the downtime in hours or based on a percentage of downtime relative to contract duration.

PROACTIVE MAINTENANCE AND SPARES PROVISION FORECAST

Service to support the forecasting of parts necessary for the continuous usage of an asset.

FACILITIES PLANNING AND COMMISSIONING

Service that supports customers in planning their facilities layout and installing necessary equipment.

EQUIPMENT LIFE CYCLE ASSESSMENT AND/OR MANAGEMENT

Service with focus on maximising the potential use of equipment through time with minimum cost.

EQUIPMENT OBSOLESCE MANAGEMENT SUPPORT

Advisory service with regards to obsolesce risk assessment for the bill-of-materials and supply chain hazards in general.

WORKING ASSET LEVEL SUPPORT

A regular advisory service that consults the customer on every spare part needed in order for the equipment to remain available.

ASSET USE/MAINTENANCE ADVICE

Advisory service on how to use (or not to use) an asset in order to maintain maximum availability.



OUTCOME-BASED

Outcome-based VPs have a long-term focus, where the provider assumes a high degree of responsibility. These VPs address the goals of the customer and therefore require the supplier to gain deep knowledge about the inter-organisational processes of their clients. Common offerings under outcome-based VPs include asset management and financing. Ownership of assets may remain with the supplier, as performance becomes more important. The focus of the provider is no longer centred on the asset or usage information, but on the customer's organisation and goals. The provider, along with the supplier ecosystem, coordinates any necessary activities, so as to allow the customer to achieve their own objectives.

Outcome-based VPs can manifest themselves as performance-based or outcome-based contracts, where the

facilitation of the customers to achieve their goals is the primary concern. The success of such contracts is very much dependent on the behavioural and informational alignment between the customer and the PSS providing parties. Sharing of risks and incentives become essential, as the supplier takes over the management of different activities and processes of the customer. The role of the provider is centred on the optimisation of resources and on the support of different capabilities so that customers can achieve their goals. This potentially engages the supplier with the customer to configure different systems, so as to achieve better outcomes. Thus it becomes important for the provider to develop knowledge and skills related to the customer's line of business.

Equipment is deployed in coordination with the provider of PSS by taking into consideration the customer's need for

the specific equipment and the way it will be used towards an operational goal. An ecosystem of suppliers can be closely involved in the contract, to ensure that the best possible outcome is delivered to the customer – risk sharing might be needed among many suppliers, the final customer and third parties.

The compensation of the supplier will not be based on activities performed (e.g. maintenance) or materials (e.g. number of spare parts) but it will be contingent on the outcomes and goals of the customer. This would require the suppliers to perform any activities they deem necessary in order for their customers to accomplish their goals. This creates major measurement challenges, as the performance of suppliers would depend on the goals and wishes of the customer. Workbook [2](#) provides three such cases of outcome-based VPs, which are described in detail.

GENERAL DESCRIPTION

BENEFITS FOR THE
CUSTOMER

Increase customer's ability to use all of their equipment/assets and perform their business in an optimal manner to achieve their goals.

VALUE CREATION
PROCESS

Providers co-create value by enhancing the capabilities of their customer and supporting them to achieve their goals.

CRITICAL POINTS

Use customer data and information in order to configure elements and components and build unique PSS configurations in order to increase the capabilities of the customer.

KPIs

OPTIMAL CONFIGURATION OF RESOURCES TO ALLOW FOR
THE OUTCOMES THAT CUSTOMERS DESIRE

Take over management of projects and processes, consult and advice customers on how to configure resources (assets, human, technology) in order to develop capabilities and accomplish their own goals.

INVESTMENT IN RELATIONSHIP MANAGEMENT

Total expenditure allocated to developing relationships with customers.

CUSTOMER SATISFACTION LEVEL

Customer expectations regarding provider performance measured against the actual performance of the company.

LOGISTICS FLEXIBILITY

Range of available options with regards to logistics to serve customer needs.

DELIVERY FLEXIBILITY

The degree of flexibility to meet customer requirements for service delivery.

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SUMMARY

This workbook has outlined five themes that companies interested in PSS strategies need to consider. In the first part, we have provided questions that can help understand where to shift your attention, when transitioning to a PSS organisation. The dimensions are directly related to the other workbooks in the PROTEUS series and we have provided pointers, as to where to look for more information. In addition to this first part, a visual guide is provided in the following page. The second and third parts of this workbook have discussed the implications entailed in a relational, long-term strategic outlook, compared to the more traditional and short-sighted, transactional outlook.

Finally, we have introduced four value propositions, along with specific KPI measurement criteria. The value propositions are generic in nature

and can easily be modified to your situation – our main aim with these has been to point out the different levels of integration between a customer and a provider.



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A READER'S GUIDE TO OUR WORKBOOKS

**MARKET
DYNAMICS**

- What are the competitive factors in our market?
- What are the offerings available in the market? What is the competitive environment?
- How do we create our market-based capabilities? Can we create new markets?

**BUSINESS
MODELS**

- Can we determine potential profits, risks and costs involved in providing integrated PSS offerings to our customers?
- Can we evaluate the life cycle costs incurred by our customers?
- What kinds of contractual obligations do we have towards our partners?

**PARTNER-
SHIPS**

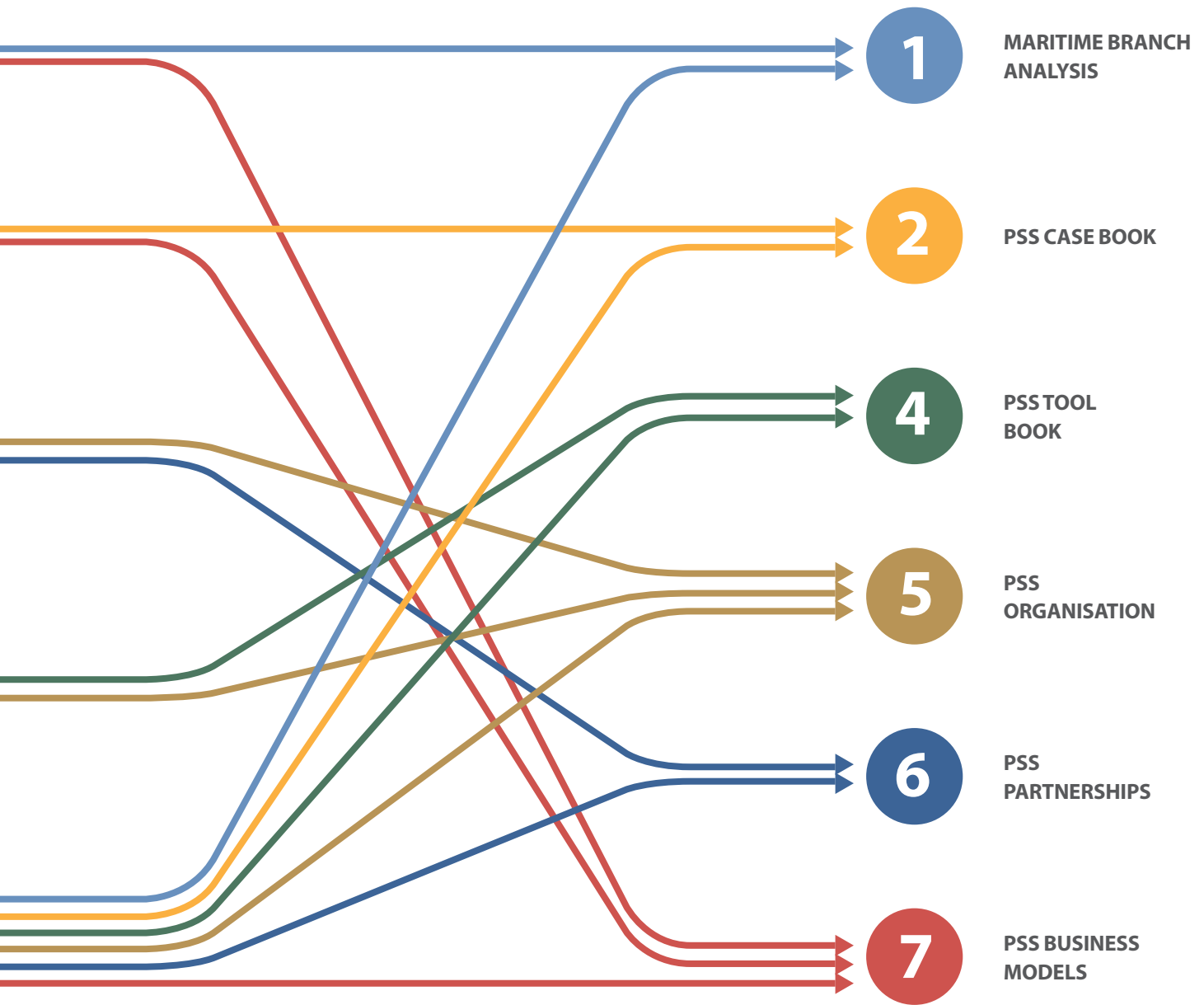
- What kinds of network constellation can be beneficial when operating in an integrated PSS oriented business?
- What are the mutual dependencies shared between the customers, the provider and suppliers?
- Can we build strong relationships and inspire trust with our customers and suppliers?

**ORGANISA-
TIONAL
DYNAMICS**

- Do product managers interact with service managers regularly?
- Do we have the competencies needed to provide service offerings?
- Is there top management support to embark on the PSS transition?
- Do we have the IT system required to support digital service activities?
- Do we have a structured development process with integrated PSS thinking?

**VALUE
PROPO-
SITIONS**

- Is our value proposition dependent on and/or co-produced along with other suppliers?
- Are our current offerings oriented toward short-term transaction or a long-term relationship?
- To what extent does the customer's own knowledge and skills affect the performance of our offerings?



This third workbook in the PROTEUS series helps the reader to assess, whether his/her company is ready - and indeed suitable - to transition from a traditional transactional orientation over to a long term, relational orientation, where a more holistic notion of value proposition becomes central to the innovation thinking inside the company.



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